

**Dr. George Yanulis earned a Doctor of Engineering Degree (D.ENG.) in Biomedical Engineering from a joint program offered through the Washkewicz College of Engineering and the Cleveland Clinic Foundation. Dr. Yanulis is an experienced Medical Device R&D Engineer/Expert Witness who has Extensive Experience/Expertise in Research & Development with all types of medical device systems; FDA & EU Medical Device Regulations; FDA Quality Controls; and Medical Device Risk Management. Dr. Yanulis's Medical Device Specialties are in the following areas: Medical Device R&D; Cardiac Device Research & Development; Heart Failure Therapy Devices; Cardiac Resynchronization Therapy (CRT) Devices; FDA Device Controls/Regulations; Clinical Engineering; Human Factors; Artificial Organ Design; Atrial Fibrillation Therapy; Cardiovascular Physiology; Cardiovascular Biomaterials; Cardiac Tissue Constructs; Deep Brain Stimulation Systems, Human Factors and Usability Engineering to Medical Devices, ISO 13485:2016, Medical devices – Quality Management Systems; Human Factors Design, Risk Management; FDA Device Quality Assurance; Cardiac Valve Design; Medical Products Defects Liability; Biocompatibility Issues for Medical Devices, and Providing Expert Testimony (provided 6 depositions to date without a Daubert Challenge) & Expert Reports (over 40 expert reports written to date).**

**Dr. Yanulis has also been Clinical Engineering Expert Consultant for hospitals, medical device companies, legal firms, and insurance carriers. Responsibilities consist of providing biomedical, clinical, and forensic engineering support to clients, that can include incident investigations, reports of findings, as well as expert witness testimony. Dr. Yanulis's medical technology experience has consisted of expert knowledge and expertise with the design, use, and applications associated with a variety of medical devices and software used for: cardiac pacing, ventricular assist, cardiac echocardiography and electrophysiology, vascular stents, physiological monitoring, medical imaging, neurological therapy, surgery, among others. Dr Yanulis has 4 peer review publications based on heart failure therapy device and cardiac pacing research conducted at the Cleveland Clinic Foundation listed below:**

- Lim P, Yanulis GE, Verhaert D, Greenberg NL, Grimm RA, Tchou PJ, Lellouche N, Wallick DW. Coupled pacing improves left ventricular function during simulated atrial fibrillation without mechanical dyssynchrony. *Europace*. 2010 Mar;12(3):430-6. doi: 10.1093/europace/eup440**
- Yanulis GE, Lim P, Ahmad A, Popović ZB, Wallick DW. Coupled pacing reverses the effects of persistent atrial fibrillation on the left ventricle. *Ann Thorac Surg*. 2008 Sep;86(3):984-7. doi: 10.1016/j.athoracsur.2008.03.085**

- Yanulis GE. A novel cardiac pacing paradigm for atrial fibrillation and heart failure patients [dissertation]. [Cleveland (OH)]: Cleveland State University; 2008 May. 106 p.
- Cingoz F, Yanulis GE, Ching E, Fukamachi K, Wallick DW. Use of conventional dual chamber pacemakers with custom lead adapters to induce atrial fibrillation or heart failure in dogs. *Ann Thorac Surg.* 2007 May;83(5):1858-62.

Dr. Yanulis has also studied the bioelectric, biomechanical and biochemical properties of animal tissue studies, human tissues using cadaveric and theoretical models. He has been a key advisor in the U.S. in clinical trials involving cardiac resynchronization management therapy devices. Additionally, Dr. Yanulis has significant expertise with the R&D surgical tools, cardiovascular devices, cardiac pacemaker devices, cardiac echocardiography, preclinical medical device trials, FDA device design controls, project Management, technology transfer, and intellectual property issues.